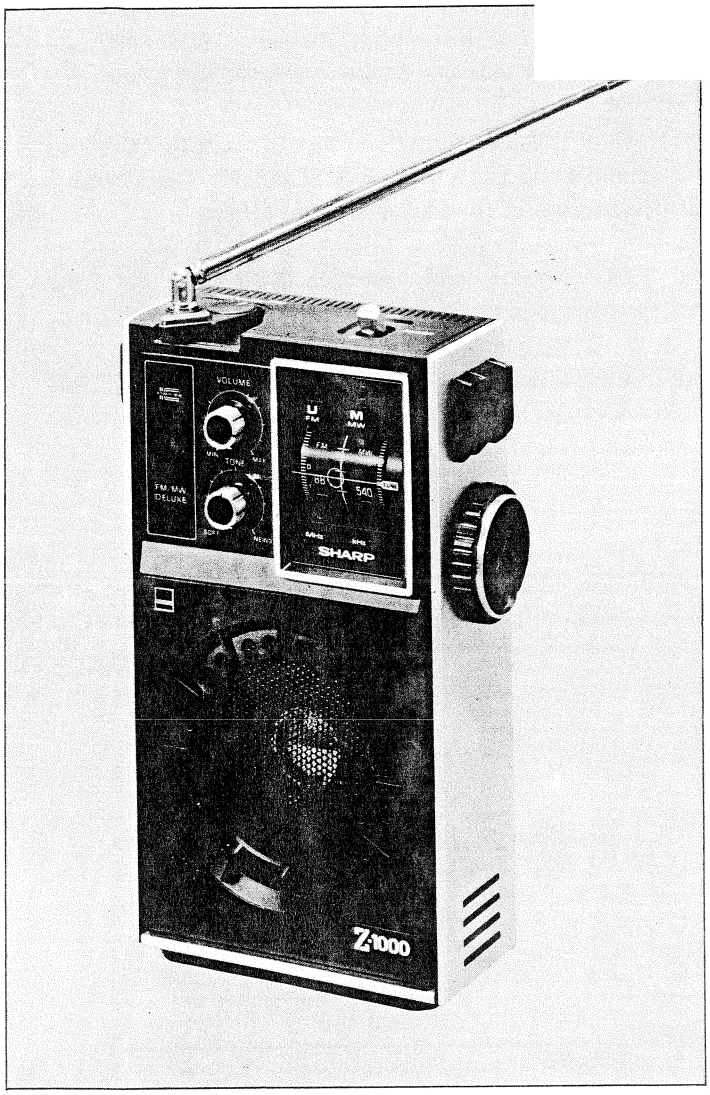
SHARP Service Manual



ɔlid State 2-Band Portable Radio

MODEL FX-208H

SPECIFICATIONS

Frequency Range
- MW ..... 520 ~ 1620 kHz
- FM ..... 88 ~ 106 MHz

Intermediate Frequency
- MW ..... 455 kHz
- FM ..... 10.7 MHz

Power Output
- Undistorted ..... 600 mW (at 10% dist.)
- Maximum ..... 700 mW

Power Supply
- BATT. ..... UM-3 (or SUM-3) x 4
- DC 6V

Antenna
- MW ..... Ferrite core bar antenna
- FM ..... Telescopic rod antenna

Power Consumed
- No signal ..... 20 mA
- Maximum Output ..... 240 mA

Speaker ..... 10 cm air suspension type V.C. Imp. 8-ohm

Dimensions ..... 118(W) x 204(H) x 64(D) mm

Weight ..... 1.2 kg (with batteries)

Circuit System
MW/FM 2-band superheterodyne 1-IC, 8-transistor and 10-diode.

CHASSIS REMOVAL

1. Remove the knobs (Tuning, Volume, Tone and Band Selector).
2. Unscrew three setscrews of the bottom lid and remove the bottom lid.
3. Remove the belt supports from the right- and left-side surfaces.
4. Unscrew two setscrews fixing the chassis and cabinet.
5. Disconnect two speaker leads and one rod antenna lead.
6. Detach the speaker ground terminal from the speaker.
7. Disconnect the lead which is connected between the cabinet and IF transformer. This disconnection should be performed at the side of IF transformer.
8. Then, the chassis can be taken out of the cabinet.

SHARP CORPORATION OSAKA, JAPAN

CIRCUIT DESCRIPTION

1) FM RF/FM MIXER SECTION

High frequency input supplied to the telescopic rod antenna passes through the antenna tuning circuits of the coils L1, L2, L3 and L4 and is amplified by the transistor Q1, then supplied to the emitter of transistor Q2 after passing through the RF turning circuits of the coils L5 and L6. At the same time, local oscillation output transmitted from the oscillation circuit of the coils L8 and L9 is supplied to the emitter to be converted into intermediate frequency of 10.7MHz, and then supplied to the IF amplification section after passing through the IF transformer T1 which is tuned to 10.7MHz.

2) MW CONVERTER SECTION

In the case of MW, MW signal given to the ferrite core bar antenna of L10 is supplied to the base of transistor Q3, which is mixed with the MW local oscillation output to be converted into intermediate frequency of 455kHz. Then, it is supplied to the IF amplification section after passing through the IF transformer T6 which is tuned to 455kHz.

3) IF SECTION

FM output coming from the IF transformer T1 is amplified in the transistors and transformers Q4, T2, Q5, T3, Q6 and T4 in that order, and ratio-detected in the diodes D5 and D6 after passing through the transformer T5 and finally supplied to the low frequency amplification section.

MW output coming from the IF transformer T6 is amplified in the transistors and transformers Q4, T7, Q5 and T8, and detected by the diode D4 and finally supplied to the low frequency amplification section. In the case of FM, detection output is utilized to apply backward voltage to the D3, which thus serves as AFC. In the case of MW, the transistor Q4 is workable as AGC.

4) AUDIO AMPLIFIER SECTION

Detection output passes through the volume control R102 and tone control R101, and then is so amplified by the IC101 (Integrated circuit) that the output section formed by Q101 and Q102 is sufficiently driven. Different from the conventional high-cut type, this tone control is so designed as to adjust both bass and treble. As for the input/output transformer, improvement is made for the material and core to assure more abundant bass.

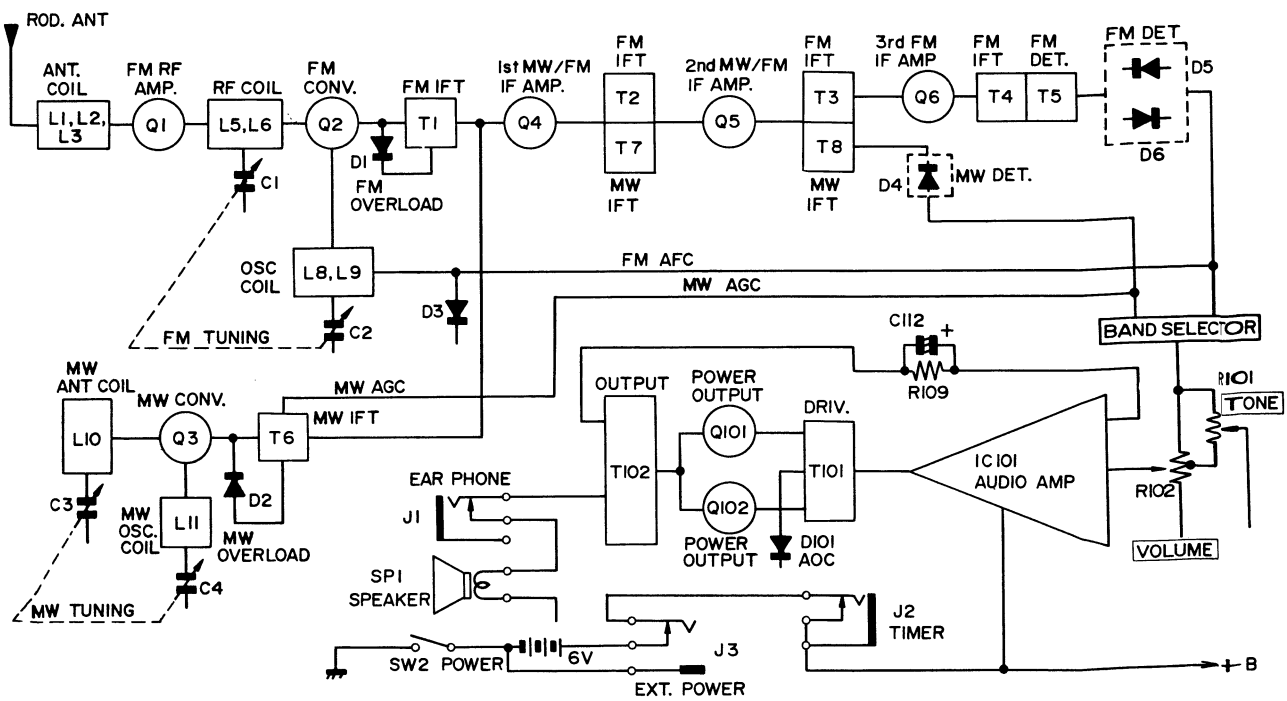


Figure 1 BLOCK DIAGRAM

GENERAL ALIGNMENT INSTRUCTIONS

Should it become necessary at any time to check the alignment of this receiver, proceed as follows ;

1) Connect an output meter across the speaker voice coil lugs.
2) Set the volume control at maximum.
3) Attenuate the signals from the generator enough to swing the most sensitive range of the output meter.
4) Use a non-metallic alignment tool.
5) Repeat adjustments to insure good results.

MW ALIGNMENT CHART

* Set the Band Selector Switch at "MW" position.

STEP	BAND	SIGNAL GENERATOR		RECEIVER		ADJUSTMENT
		CONNECTION TO RECEIVER	INPUT SIGNAL FREQUENCY	DIAL SETTING	REMARKS	
1	IF	Connect signal generator through a 10K ohm dummy to the antenna tuning capacitor. Ground lead to the receiver chassis.	Exactly 455 kHz (400 Hz, 30%, AM modulated.)	High end of dial. (minimum capacity)	Adjust for maximum output on speaker voice coil lugs.	T6 (Yellow) T7 (White) T8 (Black)
2	Band Coverage	Use radiation loop. Loop of several turns of wire, or place generator lead close to receiver for adequate signal pickup. Connect generator output to one end of this wire.	Exactly 510 kHz (400Hz, 30%, AM modulated.)	Low end of dial. (maximum (capacity)	Same as step 1	Adjust the MW oscillator coil L11 (Red).
3	Band Coverage	Same as step 2	Exactly 1650 kHz (400 Hz, 30%, AM modulated.)	High end of dial. (minimum capacity)	Same as step 1	Adjust the MW oscillator trimmer C8.
4	Tracking	Same as step 2	Exactly 600 kHz (400 Hz, 30%, AM modulated.)	600 kHz	Same as step 1	Adjust the MW antenna coil L10. (See NOTE A.)
5	Tracking	Same as step 2	Exactly 1400 kHz (400 Hz, 30%, AM modulated.)	1400 kHz	Same as step 1	Adjust the MW antenna trimmer C7. (See NOTE A.)
6	Repeat steps 2 and 5 until no further improvement can be made.					

NOTE A

Check the alignment of the receiver antenna coil by bringing a piece of ferrite (such as a coil slug) near the antenna loop stick, then a piece of brass. If ferrite increases output, loop requires more inductance. If brass increases output, loop requires less inductance. Change loop inductance by sliding the bobbin toward the center of ferrite core to increase inductance, or away to decrease inductance.

THE INSTRUCTION OF FREQUENCY ADJUSTMENT

In order to comply with FTZ rule : Nr. 358 S757, please fix the low end of dial frequency (87.5 MHz) and the high end of dial frequency (107.9 MHz) on FM band, by adjusting oscillation coil (L8, L9) and oscillation trimmer (C6), respectively, as illustrated in Figure 6.

FM ALIGNMENT CHART

Set the Band Selector switch at "FM" position.

STEP	TEST STAGE	SIGNAL GENERATOR		RECEIVER		ADJUSTMENT
		CONNECTION TO RECEIVER	INPUT SIGNAL FREQUENCY	DIAL SETTING	REMARKS	
1	IF	Connect signal generator through a 5pF capacitor to test point [TP3]. Connect generator ground lead to the receiver chassis.	Exactly 10.7 MHz. (400 Hz, 30%, FM modulated)	Low end of dial. (maximum capacity)	Connect VTVM between test point [TP7] and chassis ground.	Detune T5 (Orange). Tune T1 (Violet), T2 (Violet) and T3 (Violet) for maximum indication.
2	IF	Same as step 1.	Exactly 10.7 MHz. (Unmodulated)	Same as step 1.	See NOTE B.	See NOTE B.
3	Band Coverage	Connect signal generator through a dummy, including output impedance of signal generator to the FM antenna. (Refer to Figure 2) Ground lead of generator connected to the receiver chassis.	Exactly 88 MHz. (400 Hz, 30%, FM modulated)	Low end of dial. (maximum capacity)	Adjust for maximum output speaker voice coil lugs.	Adjust the FM oscillator coil L8, L9.
4	Band Coverage	Same as step 3.	Exactly 106 MHz. (400 HZ, 30%, FM modulated)	High end of dial. (minimum capacity)	Same as step 3.	Adjust the FM oscillator trimmer. C6.
5	Tracking	Same as step 3.	Exactly 90 MHz. (400 Hz, 30%, FM modulated)	90 MHz.	Same as step 3.	Adjust the FM RF coil L5, L6.
6	Tracking	Same as step 3.	Exactly 104 MHz. (400 Hz, 30%, FM modulated)	104 MHz.	Same as step 3.	Adjust the FM RF trimmer C5.
7	Repeat steps 3, 4, 5 and 6 until no further improvement can be made.					

NOTE B

1) Connect VTVM (0.1 volts range DC scale) between test point [TP5] and chassis ground.
2) Adjust T5 for 0 volt.
3) Change signal generator frequency 10.7 MHz + 100 kHz and −100 kHz approximately.
4) Adjust T4 for balanced peaks. Peak separation should be approximately 200 kHz.

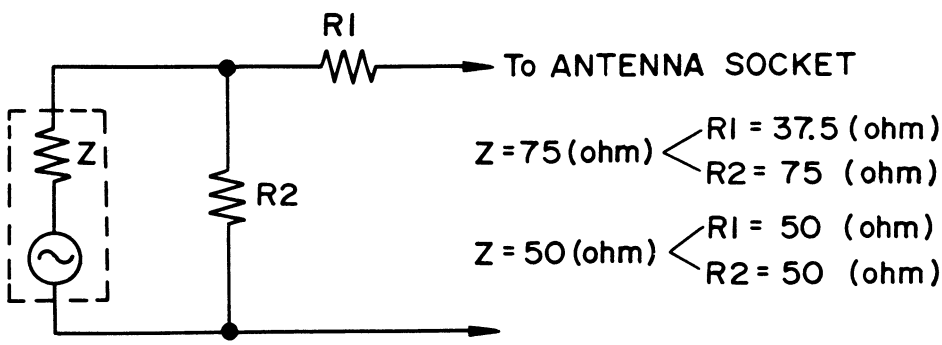


Figure 2 FM DUMMY

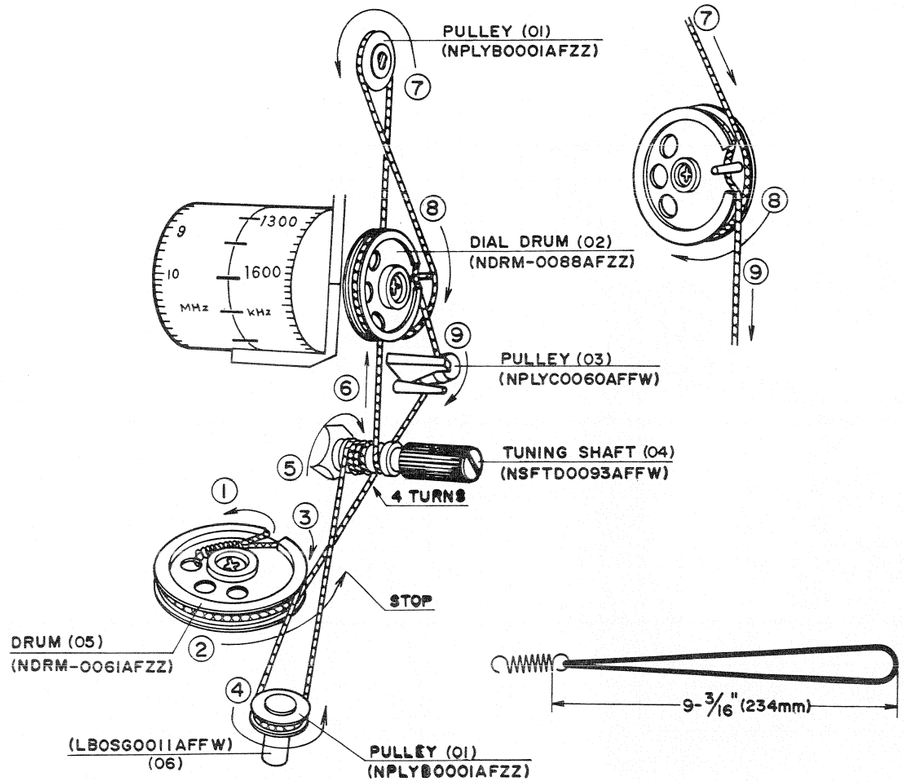


Figure 3 DIAL CORD STRINGING

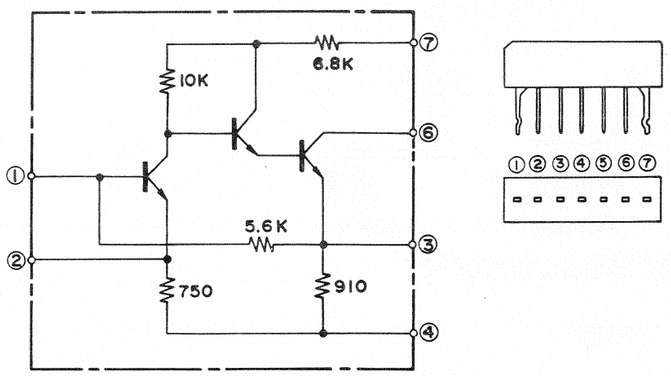


Figure 4 EQUIVALENT CIRCUIT OF INTEGRATED CIRCUIT

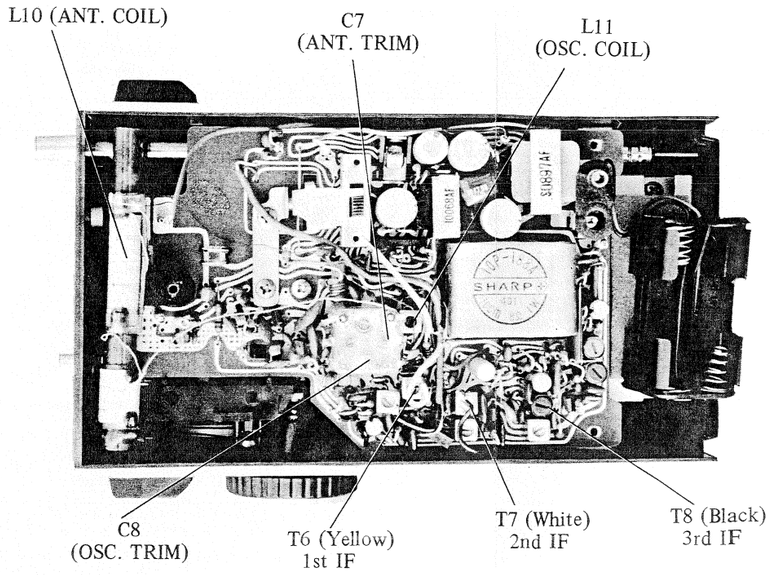


Figure 5 MW ALIGNMENT POINTS

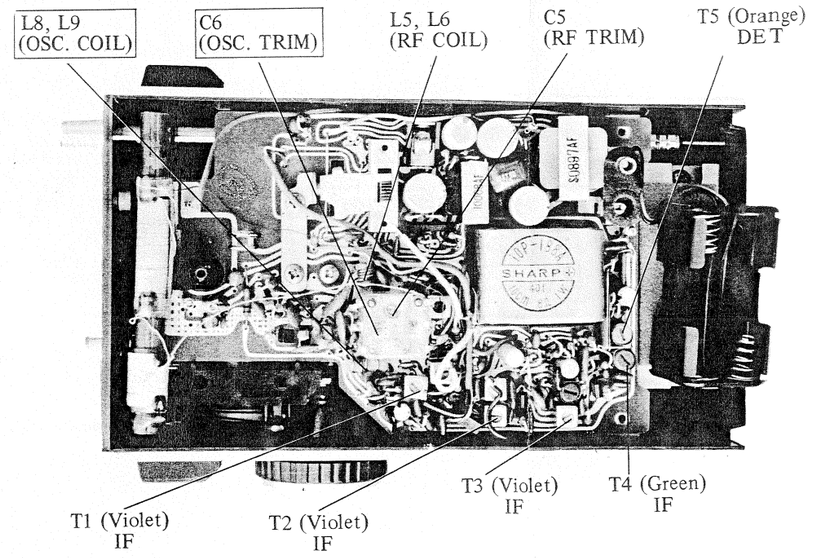


Figure 6 FM ALIGNMENT POINTS

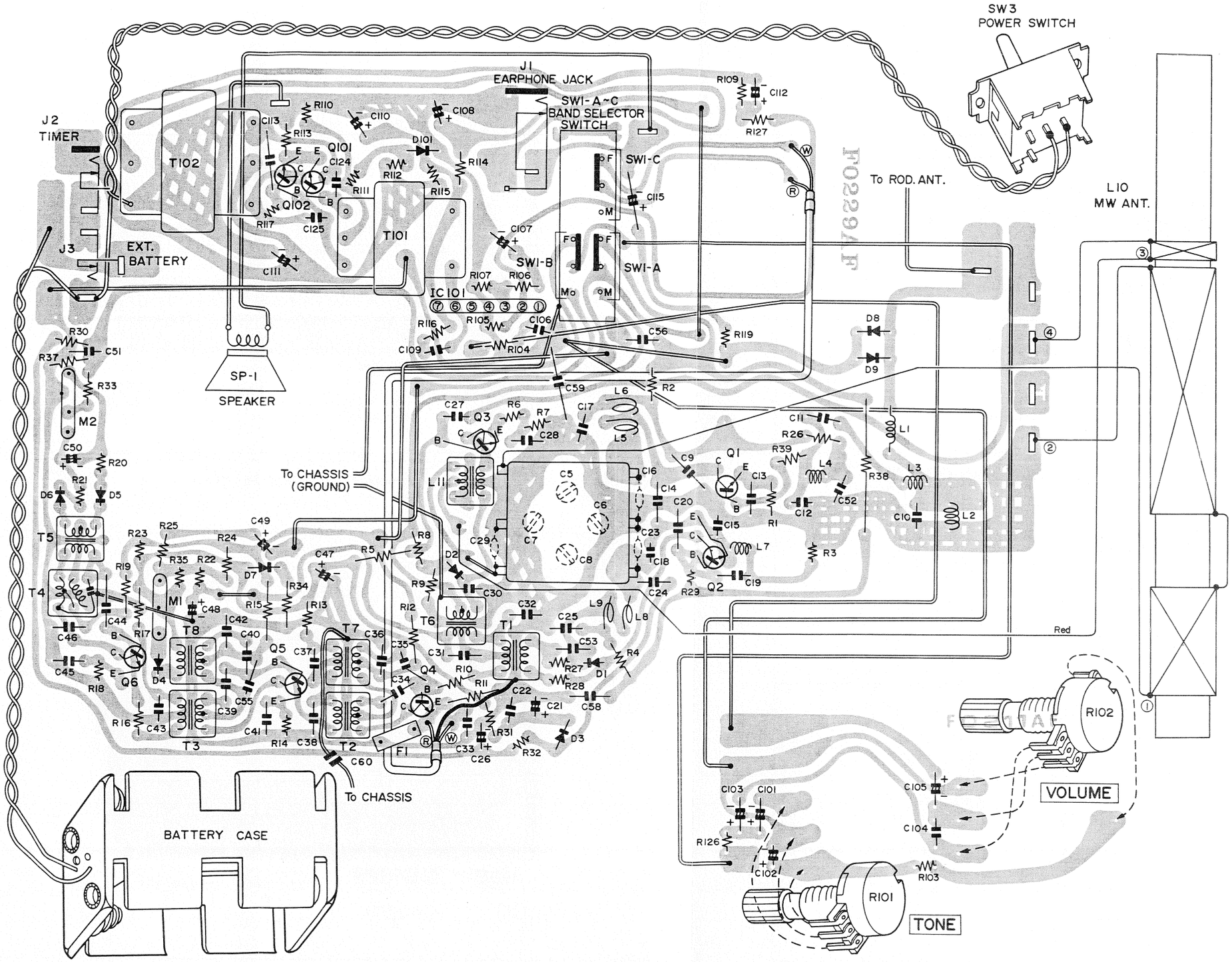


Figure 7 WIRING SIDE OF P.W. BOARD

Q1 2SC535 (B)
FM RF AMP.

Q2 2SC461 (B)
FM CONV.

Q4 2SC460 (C)
1st MW/FM IF AMP.

Q5 2SC460 (B)
2nd MW/FM IF AMP.

Q6 2SC460 (A)
3rd FM IF AMP.

Q3 2SC460 (B)
MW CONV.

Q101, Q102
2SD327 (V)
POWER OUTPUT

IC-101
AUDIO AMP

NOTES

1. FREQ RANG MW 540~1600 kHz, FM 88~108MHz
2. IF MW 455 kHz, FM 10.7 MHz
3. CAPACITANCE VALUES ARE IN MFD P = MMFD
4. RESISTANCE VALUES ARE IN OHM K = 1000
5. SW1-A~C : BAND SELECTOR SWITCH AT FM POSITION.
6. SW2 : ON-OFF POWER SWITCH.
7. VOLTAGE READINGS ARE MEASURED WITH VTVM WITH NO SIGNAL AND VOLUME CONTROL AT MINIMUM.

(Specifications or wiring diagrams of this model are subject to change for the improvement without prior notice.)

Figure 8 SCHEMATIC DIAGRAM

TROUBLE SHOOTING GUIDE

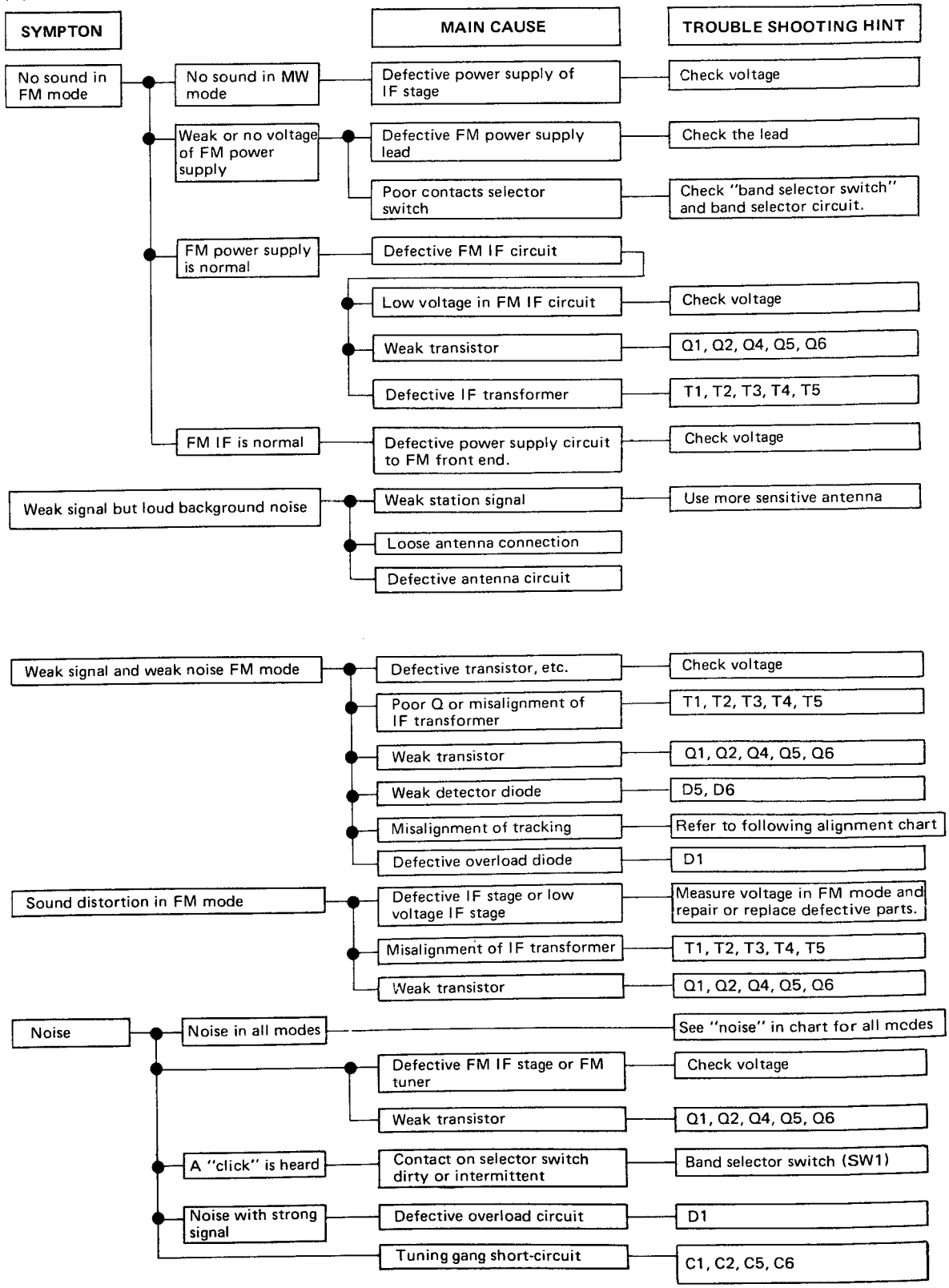
(1) ALL OPERATIONAL MODES

SYMPTOM		MAIN CAUSE	TROUBLE SHOOTING HINT
No sound	Power supply is normal	Speaker cord snaps or short-circuit or voice coil	Check speaker cord and voice coil
		Defective earphone jack	Check earphone jack (J3)
		Defective power supply circuit	Check voltage
		Defective audio amplifier circuit	Check voltage
		Defective transistor and IC	Q101, Q102, IC101
		Defective capacitor	C111, C110, C108, C107
		Defective resistor	
		Defective transformer	T101, T102
	No DC power	Defective TIMER jack or EXT. POWER jack	Check TIMER jack or EXT. POWER jack
		Defective power switch	Check SW2
Weak sound		Defective audio amplifier circuit	Check & compare voltages of each transistor pair
		Capacitor off value, leaky or shourted	
		Weak transistor and IC	Q101, Q102, IC101
		Defective power circuit	Check voltage
Sound distortion	Substitute speaker is normal	Defective speaker	Replace speaker
	Insufficient voltage of power circuit		Check voltage
		Defective audio frequency circuit	
		Weak transistor	Q101, Q102
		Negative feedback circuit short-circuit or open	R109, C112
Noise	Resonant speaker	Defective speaker	Replace speaker
	Volume noise	Defective volume control circuit	R102,C104
		Defective tone control circuit	R101, C102
Control has no effect	Volume control	Defective R102 or circuit	
	Tone control	Defective R101 or circuit	

(2) MW RECEPTION

SYMPTON		MAIN CAUSE	TROUBLE SHOOTING HINT
No sound	No sound in all modes		See "no sound" all modes
	No sound in MW mode	No supply voltage to MW circuit	Check power supply circuit
		Defective MW circuit component	Check voltage
		Defective transistor	Q3, Q4, Q5
		Defective IF transformer	T6, T7, T8
		Defective detector diode	D4
		Selector switch does not contact properly	Check "band selector switch" and band selector circuit
		Inoperative oscillator stage	Q3
		Defective antenna coil	Check antenna coil (L10)
		Defective resistor	
		Defective capacitor	
Weak sound		Weak incoming station signal	Adjust the direction or location of antenna for best reception
		Defective MW circuit component	Check voltage
		Q-factor of IF transformer is too low	T6, T7, T8
		Capacitor off value	
		Defective transistor	Q3, Q4, Q5
		Defective detector diode	D4
		Misalignment of IF transformer	T6, T7, T8
	IF is normal	Misalignment of tracking	L11, C8, L10, C7
		Voltage drop in local oscillator	Q3
Sound distortion	Amplifier is normal	Detector diode, defective or weak	D4
		Capacitor off value	
	Sound distortion on receiving signal from close station	Defective AGC circuit	R22, C48, C31
		Overload at antenna input	Adjust the direction or location of antenna for best reception
		Defective overload diode	D2
Noise	Amplifier is normal	Defective MW section	
		Poor or dirty defective transistor	Q3, Q4, Q5
		Selector switch does not contact properly	Check "band selector switch"
		Antenna circuit lead snaps or tuning gang short-circuit	

(3) FM RECEPTION

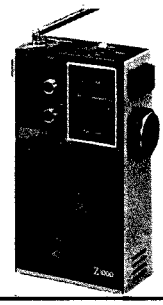

SYMPTON
MAIN CAUSE
TROUBLE SHOOTING HINT
No sound in FM mode
No sound in MW mode
Defective power supply of IF stage
Check voltage
Weak or no voltage of FM power supply
Defective FM power supply lead
Check the lead
Poor contacts selector switch
Check "band selector switch" and band selector circuit.
FM power supply is normal
Defective FM IF circuit
Low voltage in FM IF circuit
Check voltage
Weak transistor
Q1, Q2, Q4, Q5, Q6
Defective IF transformer
T1, T2, T3, T4, T5
FM IF is normal
Defective power supply circuit to FM front end.
Check voltage
Weak signal but loud background noise
Weak station signal
Use more sensitive antenna
Loose antenna connection
Defective antenna circuit
Weak signal and weak noise FM mode
Defective transistor, etc.
Check voltage
Poor Q or misalignment of IF transformer
T1, T2, T3, T4, T5
Weak transistor
Q1, Q2, Q4, Q5, Q6
Weak detector diode
D5, D6
Misalignment of tracking
Refer to following alignment chart
Defective overload diode
D1
Sound distortion in FM mode
Defective IF stage or low voltage IF stage
Measure voltage in FM mode and repair or replace defective parts.
Misalignment of IF transformer
T1, T2, T3, T4, T5
Weak transistor
Q1, Q2, Q4, Q5, Q6
Noise
Noise in all modes
See "noise" in chart for all modes
Defective FM IF stage or FM tuner
Check voltage
Weak transistor
Q1, Q2, Q4, Q5, Q6
A "click" is heard
Contact on selector switch dirty or intermittent
Band selector switch (SW1)
Noise with strong signal
Defective overload circuit
D1
Tuning gang short-circuit
C1, C2, C5, C6

SHARP

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

1. MODEL NUMBER
2. REF. NO.
3. PART NO.
4. DESCRIPTION



MODEL FX-208H

TRANSISTORS

REF. NO.	PART NO.	DESCRIPTION	
Q1	VS2SC535-B/-1	FM RF Amplifier	
Q2	VS2SC461-B/-1	FM Converter	
Q3	VS2SC460-B/-1	MW Converter	
Q4	VS2SC460-C/-1	1st MW/FM IF Amplifier	
Q5	VS2SC460-B/-1	2nd MW/FM IF Amplifier	
Q6	VS2SC460-A/-1	3rd FM IF Amplifier	
Q101, Q102	VS2SD327-V/-3	Power Output (Matched Pair)	

DIODES

D1	VHD1N60////-1	FM Overload	
D2	VHD1N34A///-1	MW Overload	
D3	VHC1S2790-Y-1	FM AFC	
D4	VHD1N34A///-1	MW Detector	
D5, D6	VHD1N60////-3	FM Detector	
D7	VHVHV23G-B/-1	Bias Stabilizer	
D8, D9	VHD1S2076//-1	Static Protector	
D101	VHV1S1210-M1F	AOC	

INTEGRATED CIRCUIT

IC101	RH-IX0928AFZZ	Audio Amplifier	

COILS

L1	RCILC0019AFZZ	FM Antenna	
L2	RCILC0019AFZZ	Trap	
L3	RCILC0018AFZZ	FM Antenna	
L4	RCILC0018AFZZ	Choke	
L5, L6	RCILR0112AFZZ	FM RF	
L7	RCILC0018AFZZ	FM Emitter Choke	
L8, L9	RCILR0118AFZZ	FM Oscillator	
L10	RCILA0303AFLA	MW Antenna	
L11	RCILB0293AFZZ	MW Oscillator	

TRANSFORMERS

REF. NO.	PART NO.	DESCRIPTION	
T1	RCILI0157AFZZ	1st FM IF	
T2	RCILI0157AFZZ	2nd FM IF	
T3	RCILI0157AFZZ	3rd FM IF	
T4	RCILI0183AFZZ	4th FM IF	
T5	RCILI0182AFZZ	FM Discriminator	
T6	RCILI0154AFZZ	1st MW IF	
T7	RCILI0179AFZZ	2nd MW IF	
T8	RCILI0170AFZZ	3rd MW IF	
T101	RTRNI0068AFZZ	Driver	
T102	RTRNS0897AFZZ	Output	
F-1	RFILA0001AFZZ	Ceramic Filter, 455kHz	

PACKAGED CIRCUITS

M1	RMPTA0011AFZZ	470 ohm + .02MFD x 2	
M2	RMPTA0084AFZZ	4.7K ohm x 2 + 330PF x 3	

CAPACITORS

(Unless otherwise specified capacitors are 50V, +80 −20%, Ceramic type.)

C1, C2, C3, C4, C5, C6, C7, C8	RVC-R0019AFZZ	Variable Capacitors, Tuning with Trimmers C5: FM Antenna Trimmer C6: FM Oscillator Trimmer C7: MW Antenna Trimmer C8: MW Oscillator Trimmer	
C9	VCKYPU1HB103M	.01MFD, 50V, ±20%, Ceramic	
C10, C11	VCCSPU1HL120J	12PF, 50V, ±5%, Ceramic	
C12	VCCSPU1HL5R0C	5PF, 50V, ±0.25PF, Ceramic	
C13	VCKZPU1HF222Z	.0022MFD	
C14	VCCSPU1HL5R0C	5PF, 50V, ±0.25PF, Ceramic	
C15, C16	VCCSPU1HL220J	22PF, 50V, ±5%, Ceramic	
C17	VCKZPU1HF222Z	.0022MFD	
C18	VCCCPU1HH100F	10PF, 50V, ±1PF, Ceramic	

REF. NO.	PART NO.	DESCRIPTION
C19	VCCSBU1HL331J	330PF, 50V, ±5%, Ceramic
C20	VCKYPU1HB103M	.01MFD, 50V, ±20%, Ceramic
C22	VCQYKU1HM103M	.01MFD, 50V, ±20%, Mylar
C23	VCCCPU1HH8R0D	8PF, 50V, ±0.5PF, Ceramic
C24	VCCUPU1HJ120J	12PF, 50V, ±5%, Ceramic
C25	VCQYKU1HM103M	.01MFD, 50V, ±20%, Mylar
C27, C28	VCQYKU1HM103M	.01MFD, 50V, ±20%, Mylar
C29	VCCCPU1HH5R0C	5PF, 50V, ±0.25PF, Ceramic
C30	VCQYKU1HM103M	.01MFD, 50V, ±20%, Mylar
C31	VCQYKU1HM223M	.022MFD, 50V, ±20%, Mylar
C32	VCQYKU1HM222M	.0022MFD, 50V, ±20%, Mylar
C33	VCQYKU1HM333M	.033MFD, 50V, ±20%, Mylar
C34, C35	VCCSPU1HLR50C	.5PF, 50V, ±0.25PF, Ceramic
C36, C37	VCQYKU1HM223M	.022MFD, 50V, ±20%, Mylar
C38	VCQYKU1HM222M	.0022MFD, 50V, ±20%, Mylar
C39	VCCSPU1HLR50C	.5PF, 50V, ±0.25PF, Ceramic
C40	VCCSPU1HL2R0D	2PF, 50V, ±0.5PF, Ceramic
C41, C42	VCQYKU1HM223M	.022MFD, 50V, ±20%, Mylar
C43	VCQYKU1HM103M	.01MFD, 50V, ±20%, Mylar
C44	VCCSPU1HL1R5C	1.5PF, 50V, ±0.25PF, Ceramic
C45, C46	VCQYKU1HM103M	.01MFD, 50V, ±20%, Mylar
C51	VCQYKU1HM333M	.033MFD, 50V, ±20%, Mylar
C52	VCKZPU1HF222Z	.0022MFD
C53	VCKZPU1HF472Z	.0047MFD
C55	VCCSBU1HL331J	330PF, 50V, ±5%, Ceramic
C56, C58, C59	VCQYKU1HM103M	.01MFD, 50V, ±20%, Mylar
C60	VCCSPU1HL180J	18PF, 50V, ±5%, Ceramic
C104	VCQYKU1HM682M	.0068MFD, 50V, ±20%, Mylar
C106	VCQYKU1HM222M	.0022MFD, 50V, ±20%, Mylar
C109	VCQYKU1HM332M	.0033MFD, 50V, ±20%, Mylar
C113	VCQYKU1HM104M	.1MFD, 50V, ±20%, Mylar
C124, C125	VCQYKU1HM103M	.01MFD, 50V, ±20%, Mylar

ELECTROLYTIC CAPACITORS

(Unless otherwise specified capacitors are 6.3V, ±20%, Aluminum Electrolytic Type.)

REF. NO.	PART NO.	DESCRIPTION
C21	VCEAAU1HW105R	1MFD, 50V, +150 −10%, Electrolytic
C26	VCAAKU0XA104M	.1MFD
C47, C48	VCEAAU0XW336Q	33MFD, 6.3V, +100 −10%, Electrolytic
C49	VCAAKU0XA104M	.1MFD
C50	VCEAAU1CW106Q	10MFD, 16V, +100 −10%, Electrolytic
C101	VCAAKU0XA224M	.22MFD
C102	VCAAKU0XA474M	.47MFD
C103	VCAAKU0XA104M	.1MFD
C105	VCEAAU1CW106Q	10MFD, 16V, +100 −10%, Electrolytic
C107	VCEAAU0XW477Q	470MFD, 6.3V, +100 −10%, Electrolytic
C108	VCEAAU0XW227Q	220MFD, 6.3V, +100 −10%, Electrolytic
C110, C111	VCEAAU1AW477Q	470MFD, 10V, +100 −10%, Electrolytic
C112	VCAAKU0XA224M	.22MFD
C115	VCAAKU0XA334M	.33MFD

RESISTORS

(Unless otherwise specified resistors are 1/4W, ±10%, Carbon Type.)

R1	VRD-SU2EY471K	470 ohm
R2	VRD-SU2EY330K	33 ohm
R3	VRD-ST2EY152K	1.5K ohm
R4	VRD-SU2EY101K	100 ohm
R5	VRD-SU2EY472K	4.7K ohm
R6	VRD-SU2EY100K	10 ohm
R7	VRD-SU2EY102K	1K ohm
R8	VRD-SU2EY101K	100 ohm
R9	VRD-SU2EY562K	5.6K ohm
R10	VRD-SU2EY470K	47 ohm
R11	VRD-SU2EY681K	680 ohm
R12	VRD-SU2EY101K	100 ohm
R13	VRD-SU2EY472K	4.7K ohm
R14	VRD-SU2EY561K	560 ohm
R15	VRD-SU2EY101K	100 ohm
R16	VRD-SU2EY470K	47 ohm
R17	VRD-SU2EY562K	5.6K ohm
R18	VRD-ST2EY471K	470 ohm
R19, R20, R21	VRD-SU2EY102K	1K ohm
R22	VRD-SU2EY682K	6.8K ohm
R23	VRD-SU2EY152K	1.5K ohm
R24	VRD-SU2EY104K	100K ohm
R25	VRD-ST2EY102K	1K ohm
R26	VRD-SU2EY334K	330K ohm
R27	VRD-SU2EY221K	220 ohm
R28	VRD-SU2EY470K	47 ohm
R29	VRD-SU2EY224K	220K ohm
R30	VRD-SU2EY105K	1 Meg ohm
R31	VRD-SU2EY562K	5.6K ohm
R32	VRD-SU2EY683K	68K ohm
R33	VRD-SU2EY102K	1K ohm
R34	VRD-SU2EY271K	270 ohm
R35	VRD-SU2EY332K	3.3K ohm
R37	VRD-ST2EY472K	4.7K ohm
R38	VRD-ST2EY101K	100 ohm
R39	VRD-SU2EY330K	33 ohm
R101	RVR-B0043AFZZ	5K (B) ohm, Tone Control
R102	RVR-B0042AFZZ	5K (B) ohm, Volume Control
R103	VRD-SU2EY471K	470 ohm
R104	VRD-SU2EY102K	1K ohm
R105	VRD-SU2EY2R2K	2.2 ohm
R106	VRD-SU2EY100K	10 ohm
R107	VRD-SU2EY561K	560 ohm
R109	VRD-SU2EY152K	1.5K ohm
R110	VRD-SU2EY102K	1K ohm

MODEL
FX-208H

SHARP

PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
R111	VRD-SU2EY330K	33 ohm	
R112	VRD-SU2EY182K	1.8K ohm	
R113	VRD-SU2EY1R0K	1 ohm	
R114	VRD-SU2EY220K	22 ohm	
R115	VRD-SU2EY330K	33 ohm	
R116	VRD-SU2EY102K	1K ohm	
R117	VRD-SU2EY330K	33 ohm	
R119	VRD-SU2EY152K	1.5K ohm	
R126	VRD-SU2EY331K	330 ohm	
R127	VRD-SU2EY471K	470 ohm	

MISCELLANEOUS

	QPWBF0211AFZZ	Printed Wiring Board, Tone Circuit	
	QPWBF0229AFZZ	Printed Wiring Board, Main	
	LANGZ0029AFFW	Lever, Band Indicator	
	LHLDF1151AFZZ	Holder, Dial Scale	
	MLEVP0029AFZZ	Lever, Band Selector Connecting	
	MSPRD0020AFFJ	Spring, Band Selector	
01	NPLYB0001AFZZ	Pulley, Dial Cord, Plastic	
03	NPLYC0060AFFW	Pulley, Dial Cord, Brass	
04	NSFTD0093AFFW	Tuning Shaft	
	NSFTZ0027AFZZ	Shaft, Band Selector	
SW2	QSW-B0028AGZZ	Switch, Power ON-OFF	
	LX-NZ0011AFJ1	Nut, Tuning Shaft	
06	LBOSG0011AFFW	Shaft, Pulley	
	PSLDM3081AFFW	Shield Plate, FM Discriminator	
J1	QJAKA0006AFZZ	Jack, Timer	
J2	QJAKC0006AFZZ	Jack, Ext. Power DC 6V	
J3	QJAKA0033AGZZ	Jack, Earphone	
SW1 (A~C)	QSW-S0094AFZZ	Switch, Band Selector	
05	NDRM-0061AFZZ	Drum, Variable Capacitor	
	MLEVP0030AFZZ	Lever, Band Selector Switch	
	LANGG0008AFFW	Bracket, Band Selector Lever	
	PCASB0018AFZZ	Battery Case	AD
	MSPRC0011AFZZ	Spring, Dial Cord	
	PITOT0305AF00	Dial Cord String	
	MSPRP0024AFFN	Spring, Rod Antenna	
	GCAB-0385AFSA	Cabinet, Front	
	LANGF0040AFFW	Bracket, P.W. Board Retaining	
	HDECA0212AFSA	Metal, Decoration, Left	
	HDECA0211AFSA	Metal, Decoration, Right	
	HDECA0213AFSA	Metal, Decoration, Under Front	
	HINDM0509AFSA	Emblem "SHARP"	
	HBDGD3007AFSA	Badge, 'Z1000"	
	HPNLD1099AFSA	Panel, Dial	
	HDECA0210AFSA	Metal, Decoration, Dial	
	LANGH0021AFFW	Bracket, Volume Indication Metal	
	HDECA0229AFSA	Metal, Indication, Volume	
	HPNC-0084AFSA	Punching Metal, Speaker	
SP1	VSP0010P-188A	Speaker →	AQ
	PFLT-0174AF00	Felt, Speaker	
	QANTR0040AFZZ	Rod Antenna	
	LHLDB3100AFFW	Holder, Battery Case	
	HDALP0244AFSA	Dial Scale	
02	NDRM-0088AFZZ	Drum, Dial Scale	
	JKNBM0144AFSA	Knob, Power Switch	

REF. NO.	PART NO.	DESCRIPTION	
	PCOVM8006AF00	Cover, Power Knob	
	PFLT-0170AF00	Felt, Ext. Power Jack	
	LHLDE1016AFSA	Holder, Belt, Left	
	LHLDE1015AFSA	Holder, Belt, Right	
	JKNBN0213AFSA	Knob, Tuning	
	JKNBN0215AFSA	Knob, Band Selector	
	JKNBN0114AGSA	Knob, Volume and Tone	
	GCABB0358AFSA	Cabinet, Back	
	HINDM0632AFSA	Metal, Indication, Model	
	GFTAB1087AFSA	Cover, Battery	
	RPHOE0006AGZZ	Earphone	
	UBNDS0006AFZZ	Belt	
	LANGS0021AFFD	Bracket, Speaker	
	FSPR2705-AF02	Connection Cord, FM Antenna	

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